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PREFATORY

February 25 and 28 mark the beginning of a new epoch in geographic education. The Thirty-second Yearbook of the National Society for the Study of Education was presented on those dates. This volume entitled, "The Teaching of Geography," was prepared in cooperation with The National Council of Geography Teachers. It is, by far, the greatest contribution to geographic education that has ever been made. Another contribution of equal value is not likely to be made in more than a generation. Like other Yearbooks of the National Society it will wield a powerful influence in promoting more effective teaching. Ten speakers at two sessions of the Society presented and discussed various features of the Yearbook. At each session there was a spirited discussion of the various problems of geography teaching. Thru the cooperation of the principal speakers the JOURNAL is pleased to present herewith brief abstracts of the addresses given on these occasions. We regret very keenly our inability to obtain abstracts of all the papers presented. This epoch-making volume is of such vital importance that every elementary teacher, principal, and other school administrator, must be thoroly acquainted with its contents if they hope to think and act in full knowledge of present standards and ideals. We urge especially that every National Council member secure a copy and practice the precepts set forth therein. A special offer to members of the National Council is described on the last page of this issue of the JOURNAL.

THE EDITOR

THE THIRTY-SECOND YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

A. E. PARKINS
Chairman of the Society's Yearbook Committee

The 1933 yearbook (the Thirty-second) on the Teaching of Geography, was sponsored by the National Society but it is also in one sense to be considered the National Council's yearbook. For several years at the meetings of the Board of Directors of the National Council there had been wishes expressed that the National Society might finance a yearbook on geography as it had for other organizations and in other fields. Thru the labors of Professor Geo. J. Miller a formal application was passed at the annual meeting of the Directors in 1929, pledging the support of the National Council; and in February 1930 this fact was communicated to Dr. W. C. Bagley of the National Society. The petition was granted by the National Society and a few weeks later a large number of geography teachers were invited to submit to Dr. Bagley suggestions as to the nature and contents of a yearbook on geography. These suggestions seemed to impress the representatives of the Board of Directors, sufficiently, at least, that a call was extended within a few weeks to the Executive Committee of the Council to meet in New York. At this meeting, the yearbook committee was selected and further plans made. Both the plans and the personnel of the committee received the approval of the Board of Directors of the National Society in late May and work on the yearbook was soon begun.

The National Society's agents in selecting the yearbook committee endeavored to have representatives from as many sections of the United States and from as many institutions preparing geography teachers as possible. The distant West had to be neglected, to hold expenses incident to the frequent meetings that would be necessary, to a low figure.

The yearbook committee in turn in selecting its co-laborers made every effort to have all sections, colleges, and types of geography represented. Fully a hundred teachers of geography and education have cooperated, drafted from about twenty states. Our major objective was to secure material that we thought should appear in a book that would be of service to teachers and supervisors of geography, to research workers in the field of geography, to

administrative officers in our public schools and to curriculum makers in general. No attempt was made by the committee to force the contributors' mode of thinking into any one particular geographic mould. Each was free to express his own philosophy of geography and to develop his theme in harmony with this philosophy. There is little doubt that the geography of the 1933 yearbook is a cross section of the philosophy and content of American geography today, certainly that in practice in our public schools and teacher training institutions. And there is a remarkable unity. Differences there are, but these are minor. This is a feature that has apparently impressed the National Society's Editor, Dr. G. M. Whipple. He writes in the Preface, "I believe it safe to assert that seldom if ever has the Society produced a yearbook that represents so nearly a *consensus gentium*—the *gentes* have been that large group of individuals professionally concerned with the place of geography in the program of education."

The National Society's aim has always been to avoid the propagandizing of cults, pet theories or movements, or "schools" of educational thought. The committee endeavored to keep the 1933 yearbook on the Teaching of Geography in harmony with the National Society's aims. The yearbook does not knowingly propagandize any particular course of study or any one geography series. We had no desire to put over any one procedure, practice or philosophy.

The yearbook bulks up to 613 pages, 566 pages of which are filled with material devoted specifically to a discussion of the various phases of the teaching of geography. The first six papers, 63 pages, discuss the rise of geography textbooks in the 19th century; about 26 pages are devoted to an exposition of the contributions of geography to the general ends in education, and its contributions and use in adult activities. This is followed by a very complete discussion of "Developing the Science of Teaching Geography," 88 pages, and three short papers on "Geography in the Curriculum." The section dealing with geography curricula covers more than 100 pages. There are also extensive discussions of "Methods in Geography," "Testing in the Field of Geography," the "Supervision of Geography Education," "Material for Visual Instruction," "Maps and Map Standards," and bibliographies for the elementary school and teachers college libraries. These papers cover 100 pages. Fifty-two pages are devoted to a digest of 82 studies completed before the yearbook was begun. Here the reader will find within a small

compass a mass of valuable information relative to many phases of the teaching of geography. Following this chapter are 18 studies prepared especially for the yearbook, presenting the results of statistical investigations and experiments, reports of classroom procedure and classroom experiences.

The abstracts that follow in this series will present at greater length some of the salient features of the various sections and chapters sketched above.

PRINCIPLES UNDERLYING THE CONSTRUCTION OF A GEOGRAPHY CURRICULUM

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Principles of curriculum construction, like those of democracy and Christianity, are much more difficult to apply than to state. Long-continued work devoted to the application of the principles enumerated below has revealed various basic facts which must be faced in any sound consideration of the curriculum in geography and of geography in the school curriculum.

1. Scientific curriculum work is objective; it involves thoro investigation of *all* aspects of the problems under consideration; it necessitates the testing of *all* reasonable theories pertaining to the solution of those problems.

2. The curriculum should be planned in terms of the goals to be reached thru its administration. One of the problems of specialists is the determination of immediate goals that constitute steps toward the ultimate goals of general education, long since defined by educators. Immediate goals of teaching geography are set forth in the Yearbook, in Miss Uttley's chapter and elsewhere, with such clarity that there no longer will be any excuse for the vague statements of objectives so common in courses of study in geography. The concern of curriculum makers should be, of course, with the potential contributions of *modern* geography to goals of the *present*.

3. Before wise evaluation and selection in terms of accepted goals can be made, there must be a thoro survey or inventory of all types of offerings in the subject or field of learning and experience in question. There is presented in the Yearbook an inventory of the major types of geographic offerings, which is based on the detailed

analysis of thousands of pages of geographic literature. Since it seems a matter of irrefutable logic that the place of any subject in the school curriculum hinges on its *distinctive* contributions to the goals of education, the distinctive and non-distinctive offerings of geography have been sharply differentiated in the Yearbook. No sound curriculum can be developed by zealous people who know the purposes they wish to serve, but who do not know the offerings from which selection may be made, and who do not use the services of competent specialists in determining the relative utility of given offerings for the purposes specified.

4. Having surveyed all types of potential offerings, and having made selections from them in terms of distinctive contributions to the ends sought, it is essential to determine the relative difficulty with which given types of ideas, abilities, and attitudes are acquired. Means employed in the determination of relative difficulty are described in the Yearbook.

5. The order of presentation of ideas (not to be confused with grade levels) should be in harmony with their relative difficulty and with the relative immediacy of the need for them in everyday living. Conclusions presented in the Yearbook with regard to the order of presentation of various types of geographic ideas are based wholly on objective studies concerned with (1) the relative complexity of major geographic adjustments in each region in question, and (2) the relative social import, for American citizens, of geographic knowledge concerning each of those regions. The conclusions are unavoidable in the light of *present* knowledge concerning those factors.

6. Divisions of subject matter should be made in terms of major ideas to be developed. Each division in the geography curriculum should be centered on one geographic core of thought. The Yearbook indicates the types of ideas, few in number, that constitute such cores.

7. In each division there should be included only that material which, in one significant way or another, contributes to mastery of the core thought of that division; any material that will function thus may be included legitimately. Realization of the implications of this principle cannot fail to clarify thought concerning so-called correlation, repetition, integration, and fusion. All facts so *used* as to contribute to a geographic understanding are, *in that use of them,* geographic, however miscellaneous they may be. No descriptive fact not so used is geographic. Geography has no representa-

tion in any curriculum which does not provide for units organized in terms of major geographic ideas.

8. The amount of time assigned to any given division of the curriculum should be (1) commensurate with the relative importance in everyday living of the major understanding developed thereby, and (2) determined in part by the understandings and abilities possessed by children to whom it is presented.

9. A given unit should be presented at that stage in a child's development when he can comprehend the core idea with reasonable effort (assuming appropriate presentation) and when he needs the idea for immediate use and for his further development. Thru the analysis of many types of geographic ideas into their component elements, and thru tracing to their sources hundreds of errors made by children, much has been learned about the stages in a child's development at which he can acquire given types of geographic ideas with reasonable facility. Much work remains to be done in the psychology of the subject. To be most helpful, however, this work must center on gaining further insight into the mental processes children go thru in acquiring *distinctively geographic* ideas, insight to be gained thru cooperative efforts of psychologists and geographers.

10. Any curriculum should be evaluated *finally* in terms of objective proof that certain desired understandings, abilities, attitudes, and habits do result from its administration. Since such final proof must be based in large part on objective testing, and since the formulation of tests adequate for the purpose is an undertaking in its infancy, it has been impossible, as yet, to apply this principle fully. Such final proof, it is to be noted, cannot be submitted now for the validity of proposed curricula in *any* field.

Investigations involving the further application of the principles stated should go forward steadily. As noted at the outset, however, investigations based on them and reported in the Yearbook already have disclosed many fundamental facts which cannot be ignored in any sound consideration of the curriculum in geography, and of geography in the school curriculum.

THE PROGRAM PROPOSED FOR THE ELEMENTARY SCHOOL

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The proposed curriculum in geography for the elementary school is the result of two years intensive work. Its formulation involved: (1) the location and examination of numerous studies both analytical and experimental in the field; (2) the integrating of the results of these studies and the application of them to the curriculum; (3) the checking of all findings and conclusions with general curricula principles. Not a single statement has been made on the basis of mere opinion. All statements have been the result of the best judgment of the committee based on all analytical and experimental studies available.

In suggesting specific material for each grade the relative difficulty of the geographic material was taken into consideration. Three criteria were used in determining relative difficulty: (1) the degree of complexity of the geographic relationships involved; (2) the relative difficulty of the facts and ideas involved; (3) the relative concreteness with which the ideas can be presented. These criteria were based on two sets of investigations reported in the 1932 Yearbook of the National Society for the Study of Education.

On the basis of the above criteria and upon the application of general curricular principles accepted and used by educators three possible programs for each grade have been proposed by the committee.

In planning a fourth grade program the main points to be kept in mind are (1) that there should be included in it representatives of regions in very low latitudes, in less low latitudes, in middle latitudes, in high middle latitudes, of polar regions, and of regions in both hemispheres; (2) that these regions should be such that most of the things people do in them are related directly and simply to a few very outstanding natural facts; and (3) that progression thru these regions in a northerly or a southerly direction is desirable in helping a child to see gradual changes in seasons and length of day and night. Some regions in the southern hemisphere should be presented as indicated in the programs in order that the children will realize that the same changes take place as one goes south from the equator.

The development of these units proceeds somewhat slowly at first because the children should be given ample time to acquire the many new skills necessary. They are learning to use a new tool, the map. The careful development of the map at this stage is important as innumerable tests show conclusively that the inability of people to interpret maps is due primarily to the failure to introduce children gradually and with care to the meaning and use of specific map symbols. Furthermore, they are learning to use pictures and textual materials as sources of geographic information and in that process are acquiring a new vocabulary and slowly developing the ability to think geographically.

Some of the relationships to which the children may now be introduced are less simple and direct than those in the fourth grade units. Stress may now be laid on relationships dealing with man's work and distribution. Again the committee suggests certain points which should be kept in mind because these points involve the application of the principles already set forth. These points are: (1) that regions characterized by some outstanding type or types of human activity that differentiate them from other regions should be depicted; (2) that the more complex these types are, the later they should be introduced; and (3) in each region the relation of the outstanding work to other activities in the region should be shown in such a way as to give a balanced idea of the various aspects of life in it.

Three programs are presented as illustrative of possible arrangement for fifth grade work.

Another factor to be noted at this point is the demand for many new map tools. Distribution maps are needed such as, distribution of population, of rainfall, and of products. The ability to read these maps must be developed in the fifth grade. Therefore here in the fifth grade not only are more complex relationships to be developed, but the tools to be used are more numerous and more complicated.

By the sixth grade the children have gained the ability to recognize and to think in terms of more complex relationships. They should be able to use geographic tools with considerable facility and be able to apply to new situations the concepts, ideas, and relationships already gained. The political unit becomes the organizing center. The political unit is somewhat more difficult than the human use unit as it involves the weaving together of all the human use regions within a political region to reach a major understanding of the country.

Several new elements are now introduced and emphasized.

These are somewhat abstract human elements, and increase the order of difficulty as they involve two and three-step relationships.

An example of such an element is density of population. It is not only of a somewhat abstract nature, but also an intermediate step is necessary in tracing relationships between density of population and the natural environment, as density of population is related to various kinds of work, each of which in turn is related to factors and conditions in the natural environment. This item is introduced by means of very concrete terms which can be graphed, namely, number of people to a square mile. Thruout the sixth grade this item is stressed.

Other more abstract human items introduced and stressed are the relative importance of a specific country among other countries, and also a consideration of the characteristics of the people themselves. The introduction of the latter is for the purpose of developing a realization that the relative importance of a country depends in part upon the intelligence and industry of the people themselves, that is, how the people take advantage of the opportunities offered by the natural environment.

In the light of the above considerations, the major points to be kept in mind in planning a program for the sixth grade are: (1) that all units be concerned with developing understandings of the environmental adjustments that give distinctive character and standing to the various countries studied; (2) that emphasis be varied with the importance of the region to the average citizen; (3) that enough time be spent on each country treated for a thoro understanding, on this level, of its geographic individuality; (4) that the order of presentation be in accord with the relative difficulty of the major understandings involved. Again attention is called to the fact that these points are based on the general curricular principles already stated and accepted.

Three alternative possibilities are represented in the programs proposed for the sixth grade.

The illustrative programs in the proposed elementary curriculum provide for geographic training on the first, second, and third levels. The fourth and fifth levels belong to the junior high school, and the sixth level to the senior high school. The curriculum as a whole provides for definite progression in geographic training with a minimum of over-lapping but with a constant deepening and expansion of the child's idea of how the various aspects of the human pattern of the whole world are related to the natural environmental pattern.

ALTERNATIVE PROGRAMS FOR GEOGRAPHY IN THE ELEMENTARY AND JUNIOR HIGH SCHOOLS

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Three members of the Geography Yearbook Committee signed a dissenting opinion relative to the inadequacy of the programs in geography set up by the elementary and junior-high school committees. The case for a more liberal set-up is herewith presented.

CYCLES AND GRADE PLACEMENT

The first book of the old two-cycle series of geographies usually included a treatment of all the continents in the fifth grade or in the fourth and fifth. The second book of the series presented another view of all the continents—usually in the sixth and seventh grades. Thus, as is shown in the table, the second book or cycle was split between the elementary and junior-high schools.

In place of this old two-cycle program running thru the fifth, sixth and seventh grades, the two committees propose a long one-cycle program running thru the same grades. As is shown in the table, this one-cycle program also is split between the elementary and junior-high schools.

In order to avoid splitting a world cycle, the short one-cycle program shown in the table is proposed. It is, furthermore, proposed that *United States and Its World Relations* be offered in the seventh grade, and *Europe and Its World Relations* in the eighth grade. The work of these two grades might be reversed.

ALTERNATIVE PROGRAMS FOR ELEMENTARY AND JUNIOR-HIGH-SCHOOL GEOGRAPHY

<table>
<tr><td>School</td><td colspan="3">Elementary</td><td colspan="2">Junior High</td></tr>
<tr><td>Grades</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Old Two-cycle Program</td><td>Home Journey Type Studies</td><td>First Cycle all Continents</td><td colspan="2">Second cycle
N.A. and S.A. | Eu., A.S. Af. and Aust.</td><td>Our Country and its World Relations</td></tr>
<tr><td>Long Modified One-cycle Program</td><td>Same</td><td colspan="3">Long One-cycle
U.S. and Canada | Europe and Asia | S.A., Af., and Aust.</td><td>Our Country and its World Relations</td></tr>
<tr><td>Short Modified One-cycle Program</td><td>Same</td><td colspan="2">Short One-cycle
N.A. and S.A. | Eu., A.S., Af. and Aust.</td><td>Our Country and its World Relations</td><td>Europe and its World Relations</td></tr>
</table>

It seems to me that the criteria set up on the whole do not support the long one-cycle program any better, if as well, than they do the short one-cycle program.

As I analyze the proposals of the two committees, I find that three criteria seem to have dominated their work. Let us examine these three criteria.

THE FIRST CRITERION

The first criterion is the one dealing with orders of complexity and levels of training and their implications. It is based on the conclusions given in the Yearbook on pages 167 to 170. Only the first four orders of complexity and levels of training are involved in this discussion. The two committees have assumed that each of these four orders of complexity and levels of training should have just one year of time. In my opinion, the orders of complexity and levels of training could just as well be invoked to support a short two-year world view as a long three-year one.

The first order of complexity deals with simple type regions found at different distances from the equator. I quite agree that the fourth year is a good place in which to offer this work. However, the material offered in this first order of complexity may differ widely in difficulty and the mastery required can be relative only.

The second order of complexity deals with distribution of peoples, patterns of land utilization, and reasons for both—a study of human use regions. The committee seized upon this idea to justify a study of the United States and Canada just one year in order to develop a mastery of this type of study. In order to complete the short one-cycle course in the elementary school, this order of complexity could be applied to a study of both North America and South America in the fifth year.

The third order of complexity deals again with human use regions within countries. I do not see at all that this order of complexity applies uniquely to Europe and Asia. Less than a year might be spent on Europe and Asia so some time could be given to Africa and Australia, thus rounding out a short one-cycle program in the elementary school.

The fourth order of complexity deals with areas having dual cultures. The two committees profess to see that mastery of this order of complexity uniquely constitutes one year of work and that the three southern continents uniquely fit into this level of difficulty. The need for completing the short one-cycle program in the

elementary school may be so important that sufficient mastery of the third and fourth orders of complexity can be secured on the elementary school level by a study of Europe, Asia, Africa, and Australia in the sixth grade.

In my opinion, the criterion of orders of complexity and levels of training supports the short one-cycle program about as well as it does the one proposed by the two committees.

THE SECOND CRITERION

The second criterion involves the six General Curriculum Principles stated on page 204 and the application of these principles to a curriculum in geography. In my opinion, this criterion is just as applicable to the short one-cycle program as it is to the long one-cycle program.

THE THIRD CRITERION

The third criterion is based on investigations of state and city courses of study.

The two committees in their analysis did not differentiate between the two types of modified one-cycle courses, but assumed that all modified one-cycle courses cover three years of work. In my opinion, the figures point more definitely to the short one-cycle program.

Mr. Russell in summarizing his study on page 541 says, "If any semblance of uniformity exists, it is in the study of the United States in the seventh year." Russell's table on pages 542 and 543 does not indicate that any of the 42 junior high schools follow the long one-cycle program.

I think the two committees cannot find in their tables evidence that the *trend* of today is toward the long one-cycle program. If a differentiation could be made, I think a short one-cycle program closing with the sixth grade would be clearly in evidence.

Finally, I think it is precarious to sponsor a program that runs counter to the trends of the day as indicated by a large majority of the newest textbooks in the field, especially when each of the three criteria set up seems to support other programs as well as or better than it does the one sponsored so ardently by the two committees.

THE TRAINING OF TEACHERS OF GEOGRAPHY

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Elementary school geography teaching is concerned with the growth of ability to interpret geographical data so that such knowledge may function in daily life, and in the solution of many economic, political, or social problems. The teacher trained in the old type of geography cannot function effectively since he has not received the type of training essential. However, the time is near when there will be no possible excuse for employing poorly trained teachers. Many school administrators have failed to demand training in geography as they have demanded training in other subjects. Fairness to children requires that properly qualified teachers be employed, and that teachers in service be encouraged to secure adequate training.

PRESENT STATUS OF TEACHER TRAINING

There are many well trained teachers in our elementary schools but available data show that approximately 12 per cent of the departmental teachers, and 23 per cent of the general grade teachers of the country have had no geographical training beyond the grade level in which they are teaching. Satisfactory results cannot be expected under such conditions.

Investigation shows that many four-year teachers colleges are adequately equipped materially and adequately staffed for the training of geography teachers. Data also show that there are a considerable number of two-year normal schools and four-year teachers colleges that offer little or no instruction in geography, and that some actually have geography instructors on their college staff who have had no training in the subject. This condition exists in spite of the fact that practically all of the graduates of these institutions go into the elementary schools.

Data also show that many properly equipped teacher-training institutions *require* little or no geography of the students who are to become elementary school teachers. This set of conditions indicates a deplorable lack of appreciation of the need of systematic training for the successful teaching of modern geography.

TRAINING GEOGRAPHY TEACHERS

Geography, like other fields of knowledge, is constantly undergoing change in content and viewpoint. A college course should give training that will enable the teacher to think and act for himself, i.e., the ability to do constructive work independently in contrast with mere skill in reproducing what he has been told to do. Teacher-education in geography may be considered three-fold: first, training as teachers of geography and supervisors; second, training in geographical thinking as an aid to the solution of economic, political, or social problems; third, education for a breadth of view as teachers of young people. A geography teacher needs a knowledge of the subject matter, ability to interpret, ability to utilize new data, and training in educational theory and practice sufficient to enable him to use geographical material in the education of the child.

Principles Involved in a Training Program. *First,* the core of college training must provide knowledge of the subject matter adequate to enable the teacher to think geographically, and particularly in that body of subject matter likely to be utilized in the elementary and secondary schools. Inadequate knowledge of subject matter is undoubtedly the greatest cause of failure among geography teachers. *Second,* there should be a continuity of study in core material. In other words, there should be a minimum requirement that samples each phase of geography most important to teachers in the elementary schools. *Third,* the training should provide knowledge of source material and training in its use for teaching purposes. *Fourth,* there should be adequate training in organization and presentation of geographical material. *Fifth,* there should be adequate training in educational theory so as to enable the teacher to adapt geographical material to the particular grade level.

The Geographic Core. I shall consider here only the sample core material and refer you to the Yearbook for full details. In contrast with other fields of knowledge, the entering college student brings almost no training in geography from his high school. This situation determines the introductory course in geography, and likewise indicates the minimum that should be required of all teachers of geography and of the social studies.

First. The introductory course deals with the fundamental elements of human geography, and lays the foundation for all further

study and geographic interpretation, and provides the point of view. It supplies that body of information that is essential to an understanding of geographic concepts in contrast with mere memorizing of them.

Second. The training should include one or more courses in regional geography, i.e., a study of the continents. This course gives training in the application of the principles taught in the introductory course and provides material of direct use to practically every teacher in grades four to eight. It also provides training in the selection and organization of subject matter and thus gives specific professionalized training.

Third. The core material should include world-view courses. These should extend the students' mental horizon to include the concept of the interdependence of nations. Such cross-section courses contribute to a knowledge of many regions, and, since they involve the world, they contribute effectively to successful teaching at all grade levels.

Fourth. The training should be climaxed by a course in geography in education commonly known as a technique course. This course should give students a comprehensive view of the function of geography in the field of education; training in the distinctive technique and presentation of geographic subject matter; develop skill in the use of geographical materials for teaching purposes and weld into a unified whole, the previous geographical and professional training which the student has received in his four-year course. It should be correlated closely with the department of education and practice teaching, and should enable the student to start on a teaching career with a feeling of confidence.

Fifth. Since modern geography utilizes material from many fields of knowledge, the properly qualified teacher must round out his training from several allied fields, such as history, economics, sociology, biology, and geology.

MAKING THE PLAN FUNCTION

To carry out the plan presented requires no radical change in the materials now offered, in a more or less haphazard fashion, in our teachers colleges. The most important changes needed are (1) organization of the material so as to secure continuity and coherence and (2) administrative, i.e., setting up a minimum requirement that will include the organizing core of a sound teacher-edu-

cation course. Since the great majority of teachers college graduates use geographical material directly or indirectly in their work as teachers, a large measure of responsibility rests upon these institutions, not only in the preparation of geography teachers but in laying a suitable foundation for teaching the social studies.

Summary

To function effectively the modern science of geography requires teachers adequately trained in its subject matter, its viewpoint, and with ability to interpret geographical material. Due to present conditions in the secondary schools, a student enters our teachers colleges with practically no knowledge of geographic subject matter except that gained in the elementary school, or incidentally. Hence systematic teacher-education must include as a minimum core (1) a basal course of fundamentals, (2) regional courses, (3) a world view course, and (4) a course in technique of teaching.

Those concerned with geographic education seek no special privileges. Geography needs no special favor. It has a contribution to make to the education of the child that is distinctive and its value will be demonstrated by properly qualified teachers. The essential need today is *an appreciation* of the importance of geographic knowledge of the world in which we live; the significance of such knowledge in the solution of many economic, political, or social problems; the distinctive contribution that geography may make to the education of our youth; and the need of placing the education of geography teachers on an equal basis with other subjects, with proper regard to the amount of pre-college training. All that geography teachers ask is an opportunity to make geography teaching effective.

PROBLEMS OF INSTRUCTION IN GEOGRAPHY

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A more thoro training in subject matter would solve many of the problems of instruction in geography. Indifference to a knowledge of subject matter in geography forbids all enthusiasm in teaching the subject. In order to teach even a small thing well the teacher must himself be big. Teachers who have acquired a thoro knowledge of the subject will, when the time comes, be able to arouse the interest of the students, hold their attention, and relate their teaching to life and living. The ultimate goals of geography instruction cannot be attained so long as there is indifference to preparation for teaching the subject. In our perplexities we are confronted by the fact that on the one hand education recognizes the value of geographical material while on the other hand it is seemingly indifferent to the preparation and training of those who are to teach this material.

But a mere knowledge of subject matter is not all. If effective teaching is to be done in geography at any level, the teacher must recognize the objectives and the limits of the field in which he is working. So vast is the field of inquiry and so vague the boundaries of the subject, one can hardly discover where to begin or having begun choose out of the overwhelming multiplicity of detail the facts that are of real significance.

Surely we are agreed that a proper appreciation of the specific objectives and limits of geography would solve many of the problems of instruction in that field. For example, our present social order is striving to bring about understanding and good will among the nations to the end that there may be world peace. How can instruction in geography help to establish and perpetuate this worthy ideal? An intimate and vivid appreciation of how the people of other lands live—their advantages and disadvantages in the economic struggle, their hopes and their fears, their successes and their failures—will broaden and deepen international sympathy. One definite goal of geography instruction should be to establish in the minds of the students the truth of a great teacher's statement, "No man liveth to himself alone."

Problems in modern geography teaching arise in connection with the course of study, its formation, and its intelligent use.

There are those who seem to think that each topic or each phase of geography work is a thing unto itself with very definite bounds. If deeper and richer harmony is desired, these people at once demand the overhauling of the course of study. Now we cannot ignore the fact that occasionally such demands should be listened to and met. A course of study is a fundamental requirement for efficiency in teaching. It would be a fine thing to have a course of study that would tell explicitly what the students should acquire each term in the way of attitudes, ideals, and habits. But let us not forget that the easiest and best way to put more into any course of study is to put more into each of the topics and phases of study that are already indicated there.

There is no place in geography instruction for the teacher who is a routine-worshipping pedant. He must interpret and adjust; he must discover and reveal. Using such apparently hopeless and stupid media as corn and winter wheat, and Pampa lands, the fishing industry, and British possessions in South Africa, he may lead his students to see visions and sometimes to readjust their lives as they sense the place which the individual plays in an interdependent world.

Reference was made a moment ago to a tendency toward thinking that each topic or each phase of geography work is a thing unto itself. Permit me to give a concrete illustration of this. As a boy in school I once had a teacher who taught us to memorize a statement in the textbook to the effect that all currents in the northern hemisphere are deflected to the right and all currents of air or water in the southern hemisphere are deflected to the left. We memorized and we recited. Later in the course this teacher taught us that the rivers of Siberia are very peculiar because they under-cut their eastern banks. Again we memorized and recited. As I recall, none of us in the class and apparently not even the teacher saw any relation between the one fact that currents of air and water are deflected and the other fact that the rivers of Siberia undercut their eastern banks. One of our greatest problems in modern geography teaching is to avoid having our students memorize when they should imagine and above all to avoid having them memorize when they should be forming judgments. The textbooks are full of judgments, which in too many cases the students proceed to memorize. I am sure we are all agreed that one of the greatest problems of instruction in any field of knowledge is to promote thinking. The British statesman

who defined geography as a state of mind has given us the best definition of the subject that has ever been formulated. Geography is not a study of the earth as the home of man; it is what one thinks about as one studies how human life adjusts itself to the natural world. Geography is not a study of relationships; it is what one thinks about as one lists or catalogs relationships. Geography is not what we read or what we see or what we hear; it is only what we think.

It is therefore a problem of instruction to secure activities on the part of students that will result in the right kind of thinking. Mental salvation is not attained by faith but thru works.

To teach useful scientific facts and to apply them to everyday life in connection with such problems as the elimination of waste, unfair distribution, costly competition, and the exploitation of natural resources is a task for which special technical knowledge and teaching skill are required and for which the schools must be mainly responsible.

METHOD IN GEOGRAPHY

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The discussion at the first meeting of the National Society for the Study of Education brought out very sharply some of the differences in point of view which are basic to a consideration of method in geography. As Professor Rugg indicated, one may take any one of three positions with reference to geography; one may teach it as such, one may attempt to fuse it with history and civics into the so-called "social studies," or one may consider that it represents simply one field of data from which to draw in the consideration of large units of subject matter. The avowed purpose of such so-called integrated units is to give children all at once a complete understanding of *all* the problems which confront a nation, be they geographic, political, psychological, economic, or historical.

Professor Rugg objected strenuously to the idea that a child may consider part of a nation's or a region's problems, without at the same time considering all of them, maintaining that such a method gives a distorted and untrue picture, which will not function in gaining a complete understanding later on.

My time does not permit a complete answer to these contentions. I do wish however to present two points in answer to them. First, one can readily see that the distinction between parts and wholes is academic and unsound. The only "whole" which could be defended as such, would mean all the knowledge possessed by the wisest man in the entire world. Indeed, I am not sure that even then one could defend this grasp of the world as a complete "whole"; I am inclined to believe that only the knowledge of the Deity himself could be so defended. It follows then that any given amount of knowledge of any lesser individual is knowledge of parts and not wholes and therefore unsound.

Second, Professor Rugg neglected completely the problem of stages of mental maturity in growing children. The Biblical rhapsodist once said "For we know in part and we prophesy in part. But when that which is perfect is come, then that which is in part shall be done away." Professor Rugg is far more naïvely optimistic than I am if he believes that "that which is perfect" will come, say, in the third or fourth, or even the fifth, sixth, or seventh grades.

The dilemma which confronts anyone who deals with the problem

of method in geography is due, I believe, to two very different and apparently mutually antagonistic lines of development. Each of these lines of development has its source in a long history of growth, but each has undergone a tremendous impetus in the last thirty years. I refer to the development of geography as such on the one hand, and that of educational method on the other.

If we think first of the development of geography, we must remember that in America it has, so to speak, come of age in the last thirty years. Before that time the subject was a sort of catch-all for any data which did not seem pertinent to other subjects. During this thirty year period the meaning of geography and its contribution as a subject of study in the elementary school have become clearer until today there is a reasonable agreement as to what geography is and what it can do for the developing child.

If we turn now to the development of educational method in the last thirty years, we are confronted, I believe, with a curious confusion in thinking which arises as a result of failing to draw a distinction between values or ideals, and techniques. Inspired by such philosophers as Dewey, Kilpatrick and their followers, we have seen a re-interpretation of educational values or ideals in terms of child growth. The disciples of these philosophers have then developed certain methods or techniques which they are prone to claim as the *only* way to obtain the values. Confusing techniques and values in this way, they are loud in their condemnation of others who disagree, claiming that their philosophy of education is at fault. This is the position I believe which Professor Rugg took in the recent discussion.

This confusion in thinking has had the unfortunate result that it has tended on the one hand to exalt the child, and on the other to be contemptuous of subject matter.

As for myself, I am profoundly convinced that one can find his way out of this dilemma between geography and modern educational philosophy without serious difficulty. To do so it is necessary simply to take philosophy for what it is, namely, a statement of values or ideals, to see these ideals clearly, and then to determine how they can be obtained thru the study of geography.

I particularly deplore the contempt for subject matter to which I have already alluded. I believe this contempt is less defensible in 1933 than it has ever been before. The trend of social and technological development in the United States in particular and in the world in general has made tremendous changes in the intellectual

needs of the individual. In some respects this change has made life far more simple in many of its aspects. Whereas our forefathers when they needed light in the house had to fill a kerosene lamp, trim the wick, and then light it with a flame from the fireplace, today we press a button and the room is flooded with electric light. Whereas our forefathers had to shear the sheep, card the wool, spin it into threads and then into cloth and then cut and tailor a suit from it, at the present time we can go to a department store and in a few minutes time be provided with a new suit of clothes. Whereas our forefathers had to know how to put the harness on a horse and then hitch him into the buggy, today we press the starter button on our automobiles and with a few simple reactions are driving the car to our destination.

At the same time, however, that personal needs have become more simplified for the individual, international life has become infinitely more complex. The development of transportation and communication and the growth of big business which has its ramifications in every country, has made the world into a community instead of a universe. Our forefathers needed to know little about the geography of Europe or of Asia. They were remote from these places and their lives were in general little touched by the geographic or political situation abroad. Today it is impossible for any person to be intelligent about the affairs of his nation or indeed of his community, without a knowledge of world geography. Exact information is needed today as never before for intelligent participation in national affairs. During the same time then that geography was developing a point of view, the necessity for the study was becoming enormously enhanced. In our present world situation, it seems to me that there is less need for any defense of geography as a subject of study than there has ever been before in the history of the world.

If we accept, then, the importance of geography, it is necessary next to examine the ideals or values on which a modern philosophy of education places its emphasis.

It is the belief of the speaker that there are two fundamental tenets of modern philosophy. The first is that we are educating the whole child, not just a portion of him. The second is that the education which a child receives should be of interest and significance to him at the time when he is learning, and that it is not being put into cold storage, so to speak, for later use when he becomes an adult. As a result of these two points of view four important corol-

laries follow. The first of these is that freedom and happiness are essential in order that the child may reach his most satisfactory development. The second is that whereas immediate learnings which can be easily tested are important, yet the concomitant learnings which are usually matters of attitudes and appreciations are at least equally important. The third is that the various aspects of human life are closely interwoven and that, therefore, the relationships between subjects of study are extremely important. The final corollary is that thinking, activity and purpose which are separate phases of one thing are the indispensable attributes of any good system of learning.

I believe that these ideals of modern education are fundamental statements of ideals or values. As a result of the confusion to which I have alluded, these points of view have been translated into methods or procedures and these methods or procedures have then been identified with the statement of values in such a way that it is the opinion of many enthusiasts that their procedures are the *only* way of attaining the values. Thus the integrationist seems to believe that thru the integration of the subjects of study the child's mind becomes integrated, and therefore the only way to teach the whole child is to integrate all the subjects of study. He states also that since we are teaching material to children which must be of significance to them at the time, then only the immediate environment of the child is proper material for him to study. He maintains that since children's purposes are important only those things which children themselves suggest should be studied, and since activity is a way of learning he is likely to make in practice at least, a fetish of activity for its own sake, and to be contemptuous of "book learning."

Such conclusions from the philosophers' statement of values imply that there is only one way to attain these values and that if one holds any opposing opinions one must be old-fashioned in his philosophy. The real interpretation of the situation, however, for one who believes as I do in the values of a subject like geography is quite different. He believes that he is confronted with a problem which may be stated in this way. Can one teach geography and still attain the fundamental values which the philosopher defends? Is it necessary to accept the procedures which are suggested above in order to attain the values?

I believe that the answer is that every one of the values mentioned above can be secured and at the same time geography can be

taught as a subject. Let us see how this can be true. We are teaching the whole child, not one compartment of his mind. Granting this, that does not in the least mean that a child cannot pursue a specific type of activity and still have all his energies engaged in it. The mere fact that one studies geography does not mean that it disintegrates the wholeness of his personality. Every adult engages in activities along an individual line at times; we all read novels, or play bridge or golf, study the teaching of our next day's work, or discuss politics. We think along these particular lines while we are doing these particular things. No disintegration of personality occurs because we are doing this; we simply turn our energies in one specific direction for a certain length of time.

Because one believes that material should be of immediate significance to a child does not in the least imply that the only proper subject for his study must be his immediate environment. Man is distinguished from other animals by the breadth and significance of his mental life. In imagination he can climb mountain tops that he has never seen, he can investigate the social or economic life of a people he has never visited. That the child lives a rich life of the imagination is one of his outstanding characteristics as every teacher of children knows. A life situation for a child, or for anyone else, is not a situation which occurs actually in his real life; it is a situation which has meaning and significance for him. One, therefore, can fully answer the ideal of philosophy that education must have immediate value to a child and still believe in teaching him the geographic truths of the entire world.

Freedom for a child in the classroom does not in the least demand that he shall not study any one subject like geography. On the contrary a reasonable degree of freedom makes the finest type of geography possible. Whereas in the past rigidity of discipline made a natural, wholesome situation in the classroom impossible, our modern point of view allows for a finer type of geographic teaching than has ever been possible in the past. Children today in their study of geography move naturally about the room if a reference book is needed or if a demonstration at the blackboard is desirable. They converse in low tones during a study period concerning ideas and data, and are free from the unnatural strain of the past which made learning an unpleasant and difficult matter.

The philosophers' emphasis on concomitants of learning can be attained in the subject of geography perhaps more extensively than

in any other subject of study. Geography deals with world affairs. Sympathetic understanding and tolerance can be gained thru the study of geography as they can thru no other subject, because geography in its attempt to interpret man's interrelationships with his natural environment makes it possible for children to diagnose the situation of other countries and to understand their difficulties.

The mere fact that one teaches geography does not in the least mean that he must teach it in the wooden, abstract, unrelated way in which it was taught in the past. Geography is a point of view which helps to explain the facts of the world. It is entirely possible and desirable that interconnections between geography and other subjects of study shall be shown. For example, it is entirely impossible to understand completely the situation in China at the present time without some reference to the history of China. No good geography teacher has ever failed to use history or arithmetic or literature or any other subject when it was essential for the understanding of a geographic point of view. On the other hand, when teachers are teaching other studies, frequent reference is made to the subject matter of geography. But relationship does not mean identity. When the geography teacher introduces data from other subjects into his teaching, it is done to solve a geographical problem. When the teacher of history or literature or arithmetic introduces geographic subject matter into these other studies it is to solve a problem germane to them. It is easy to show interrelationships between subjects, but the fact that these interrelationships exist does not at all argue that they should all be taught in a sort of intellectual potpourri of subject matter. Finally to maintain that because one teaches geography he must therefore neglect activity, purpose and thinking is to the student of geography teaching a manifest absurdity. Purpose should always be relatively simple and direct. Purpose for the solution of which geographic subject matter is essential is just as worthy a purpose as one which has no one field of educational thought. After the purposes have been conceived, thinking which requires data within the field of geography comes as a natural result. The activities which furnish the dynamic method of learning may of course be within the realm of the subject of geography. It seems to the speaker therefore an inescapable conclusion that when a person advocates the teaching of geography he is neither showing himself opposed to the principles of modern philosophy nor is he looking backward in his educational theory. Holding

as essential those conclusions of educational philosophy which represent real progress in education in the last thirty years he can both illustrate them dynamically in the teaching of geography and at the same time he can preserve those values inherent in this subject of study which this Yearbook analyzes so thoroly.

HOW THE YEARBOOK IMPRESSES THE PROFESSIONAL GEOGRAPHER

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In stating my impressions of the Yearbook of Geography, I expressly disclaim either intent or authority to voice the views of professional geographers as a group. The opinions expressed are mine only and they do not necessarily reflect those of other geographers. I am at somewhat of a disadvantage in commenting on a publication which deals almost exclusively with problems of presentation of subject matter in the elementary schools—a field somewhat removed from that of my immediate interest. Further, I am too handicapped by a limited acquaintance with the some 600 pages of text of the Yearbook, a copy of which I received only a few days ago, to do more than mention a few points specifically and venture some statements of general impressions, without attempting to pass judgment on specific sections.

The members of the Yearbook Committee are to be commended for the interest they have manifested and the success which has attended their efforts in bringing together in well organized form such a variety of topics dealing with so many phases of the presentation of geographical material.

The Introductory Section is well conceived, dealing as it does with a variety of topics which supply the background for the five following sections, which make up the substance of the Yearbook. In commenting on these five sections, which constitute the publication proper, I wish to call attention to the following points:

First: A large percentage of the 500 pages dealing with the teaching of geography has been written by individuals who secured their preparation at one institution. It would have been preferable, tho probably impracticable, to have secured what might logically be expected to be a more diversified point of view.

Second: A similarly high percentage of the text was prepared by members of the Yearbook Committee, one member alone being responsible for an entire section, comprising approximately 20 per cent of the entire 500 pages.

Third: It is apparently accepted as a fact that what is taught in the elementary schools as geography necessarily constitutes what should be taught under that title, an assumption not always justified.

Fourth: The acceptance of given trends in types of presentation as proof of the desirability of such types of presentation constitutes an endorsement which is not necessarily warranted.

Fifth: The assumption in certain sections that geography is a study of "relationships" will not be endorsed generally and may create doubt as to the validity of types of presentation based on such an assumption as to the field of the subject.

Sixth: It is stated explicitly in one section, and by inference in others, that "objective proof of the soundness of the views—cannot be given." If this is true, it tempts one to speculate on the soundness of the views.

Seventh: In certain places, the facts as stated are open to question which may cause doubt as to the value of conclusions if based thereon.

Eighth: Programs outlined for instruction in geography are probably too ambitious for satisfactory realization in view of the actual teaching situation, with so many average, poorly prepared and overworked teachers offering the subject with inadequate equipment.

The Yearbook is a valuable contribution and well worth careful study. The authors are to be commended for their courage in this venture into a more or less pioneer field and for their success in the venture. Such criticism as I have made does not reflect seriously on the Yearbook. Speaking for myself only, I wish to express my obligation to those who have made the Yearbook a possibility and to voice my appreciation of their efforts. I feel relatively certain that I should be safe in expressing similar views for the great majority of American professional geographers.

THE YEARBOOK ON THE TEACHING OF GEOGRAPHY FROM THE POINT OF VIEW OF A STUDENT OF EDUCATION

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I am particularly impressed with the apparent agreement of the Committee regarding the educational value of geography. Educationists have a habit of worrying lest a child will learn something that he will not use, and relatively few people use their knowledge of geography in a direct and overt way in the solution of problems that confront them. Most men and women could probably do their daily work just as well if they did not know that the earth is an oblate spheroid or that coffee is grown in Brazil or that cities tend to grow up at the termini of trade-routes. And yet in spite of the fact that for the average man geographical knowledge has little of what one may call direct utility, geography was the first of the so-called content subjects to be admitted to the curriculum of the modern universal school and it has remained as the first of the content subjects to be studied by the pupil.

It is significant, I believe, that the first effort of the universal school after it has taught the child to read and write and cipher has been to teach him something of the world that lies beyond his immediate environment. The evolution of universal education, in other words, seems to indicate that there are educational values that are even more fundamental than direct utility in the narrow sense of the term, and that a most important function of formal education is to widen the space horizon of the learner. And since, in the early textbooks, geography and history were commonly fused, one may similarly infer that another important function of education is to extend the time perspective of the learner. Or, to put it in another way, the first content materials recognized in the evolution of the universal school served to lift the learner above the narrow confines of the local and the immediate.

We see it now, of course, much more clearly in terms of preparation for citizenship, and the development of universal education has been closely bound up with the development of political democracy. The average man may find little direct, practical use for his knowledge of geography and still less for his knowledge of history but when it comes to an intelligent participation with his fellows in

the solution of collective problems he very distinctly needs what geography and history furnish. And what both furnish is well expressed by the term which is used so frequently in the Yearbook discussions—namely the term, "understandings."

The sections of the Yearbook dealing with the development of understandings constitute, I believe, a most significant contribution to educational theory. Scientific psychology has not been of very great service to education in connection with learnings above the level of specific habit and specific meaning. In fact, some psychologists do not recognize levels of learning, and in effect reduce all learning to habit-formation. The "understandings" that are the important outcomes of the study of history and geography are, I think, varieties of what the Gestalt psychology calls "insights," and the term "insightful learning" has been proposed by the Gestalt writers to distinguish the acquisition of understandings from the formation of habits.

Insights seem to come in two ways. Many persons can recall the experience of having a clarifying idea flash upon them apparently out of a clear sky. More frequently, I think, the insight emerges after one has worked with specific data which finally coalesce, so to speak, to form a quite new pattern or configuration. It is possible, too, that the so-called "flashes" do not really come out of a clear sky, but represent a coalescence of more specific ideas which one does not happen to recall at the time when the flash comes.

Whatever the case may be we need, I am sure, a careful study of the ways in which understandings or meanings develop, and particularly of the way in which they expand to include wider and wider ranges of experience.

A second part of the Yearbook in which I am particularly interested is Professor Miller's chapter on the preparation of teachers. It is hard to explain the fact that the oldest content subject of the universal school has been given so little attention in the professional schools for teachers. The recommendation of the Committee that one and one-half years of work in geography be required for all prospective elementary-school teachers impresses me as a reasonable demand. In a four-year curriculum for intermediate-grade teachers, I should personally recommend twelve semester hours instead of the eight semester hours recommended by the Committee apparently for all elementary-school teachers.

I note that the Committee recommends a course in the teach-

ing of geography. I have a complex regarding such courses in professional schools for teachers. In every course in geography, in my judgment, the problem of selecting and adapting materials for the lower schools should receive due attention and if a separate course in methods is required this attention will not be given.

In conclusion I shall say a few words about fusion courses and particularly in view of Mr. Rugg's brilliant defense of his proposals and Miss Parker's brilliant criticism, the words will be very few. I confess to have become more uncertain about this matter since Saturday night's discussion. I have been trying to apply Miss Parker's definition of the field and purpose of geography to a concrete situation. Geography, it seems, is to explain "how the kinds of people who live in given regions and the natural surroundings in which they live help one to see why they live where they do in those regions, why they make their living as they do, why they use certain methods in their work, why given activities and signs of these activities in the landscape are distributed as they are, and why certain customs with regard to food, clothing, shelter, travel, play, and the like developed there."

I have been trying to apply this to a region that I had an opportunity to study last year—Mesopotamia or, as it is now called, the kingdom of 'Iraq. If you went to 'Iraq you would find certain Arab tribes, lately nomadic, now in the process of settling on irrigated lands. If you were to inquire why they will make their living by farming instead of by breeding camels and raiding neighboring tribes, I suppose that one answer would be purely geographical,—namely, the land is there, it is very rich, it is easily irrigated. But the land has always been there, it has always been very rich, and irrigation has been practiced since the dawn of history. In short, any explanation that I can make by applying geographical concepts to the present situation does not get me very far. By bringing in just a little history, however, I can get a clarifying explanation that works back to natural surroundings. Ten or twelve years ago an Australian officer in the British forces occupying Mesopotamia conceived of the idea of a motor route between Damascus and Baghdad—500 miles across the Syrian desert. The circuitous caravan route demanded often a full month of travel. He blazed a compass-laid trail and now the convoys make the trip in twenty-two hours. When it was found that Fords and Buicks could negotiate the desert, other trails were laid out, and it was not long before the business of breeding camels for the caravan trade began to peter out.

It was a case of "camel-unemployment" as one of the 'Iraqi leaders expressed it—or one might say that the machine-age had at last reached the desert. The nomadic tribes are settling and becoming farmers because they have to.

Another interesting phenomenon is the frugality in the use of water by the settled tribes. There is plenty of water, of course, in the irrigated areas in which they settle, but they use it very sparingly, especially for purposes of cleanliness. The result is that health conditions are worse than among the nomadic tribes. The fact is explained, of course, by the fact that the *tabu* against the use of water which grew up under the conditions of desert life persists when the tribes settle altho the *tabu* is no longer necessary. On the other hand, uncleanliness is much more of a menace when the tribes live in mud huts and the filth accumulates than when they move from place to place and use hair tents as shelters. Here again is a phenomenon that can be explained only by reference to the past.

I am frankly rather confused by the apparent insistence of modern geography to limit itself to explanation of human phenomena in terms only of the immediate natural environment. As a student of education this seems to limit unnecessarily the usefulness of geography as a school subject.

FIXING THE FACTS OF CLIMATIC DISTRIBUTION

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POLAR TYPE CLIMATIC CHARTS

The polar type climatic chart base is a particularly useful visual aid to the instructor who seeks to fix the facts of climatic distribution in the minds of his students. Its unique advantage lies in the elimination of the fictitious beginning and ending of the climatic year. Mean meteorological observations plotted on polar charts yield patterns that are at the same time interesting, significant, and readily understood. The contrasts between temperature marches and precipitation regimens of northern and southern hemispheres, west and east coasts, and of various latitudes are so striking and fascinating in terms of patterns that few students escape a relatively thoro foundation in climatic distribution when given the opportunity of studying them in connection with world maps.

The polar chart bases designed by Leighly[1] provide scales for plotting practically every type of meteorological observation, but as the chief climatological interests of the student of elementary geography center about temperature and precipitation we may limit ourselves to these in the following discussion. The charts provide both English and metric (Fahrenheit and Centigrade) values for all observations but we may ignore these at present in order to emphasize patterns rather than actual quantities.

A polar chart consists essentially of twelve equally spaced rays meeting at a common center. These represent the months of the year, in clockwise order, January at the top. Greater values are represented by increased distance outward along each ray. Mean monthly temperatures may be marked on each ray and connected by a curve thru the twelve points in order to represent the annual march of temperature. Precipitation may be represented in terms of accumulated monthly totals by means of blocks extending from an arbitrary zero point on each ray outward for greater distances in proportion

[1] J. B. Leighly: Polar Type Climatic Chart Base, Edwards Brothers, Ann Arbor. The theory of this particular chart base, with its peculiar property of retaining slopes of curves independent of distance to the center, is described by Leighly: Graphic Studies in Climatology, II. The Polar Form of Diagram in the Plotting of the Annual Climatic Cycle, Univ. Calif. Publ. Geog., Vol. 2, 1928, pp. 387-407.

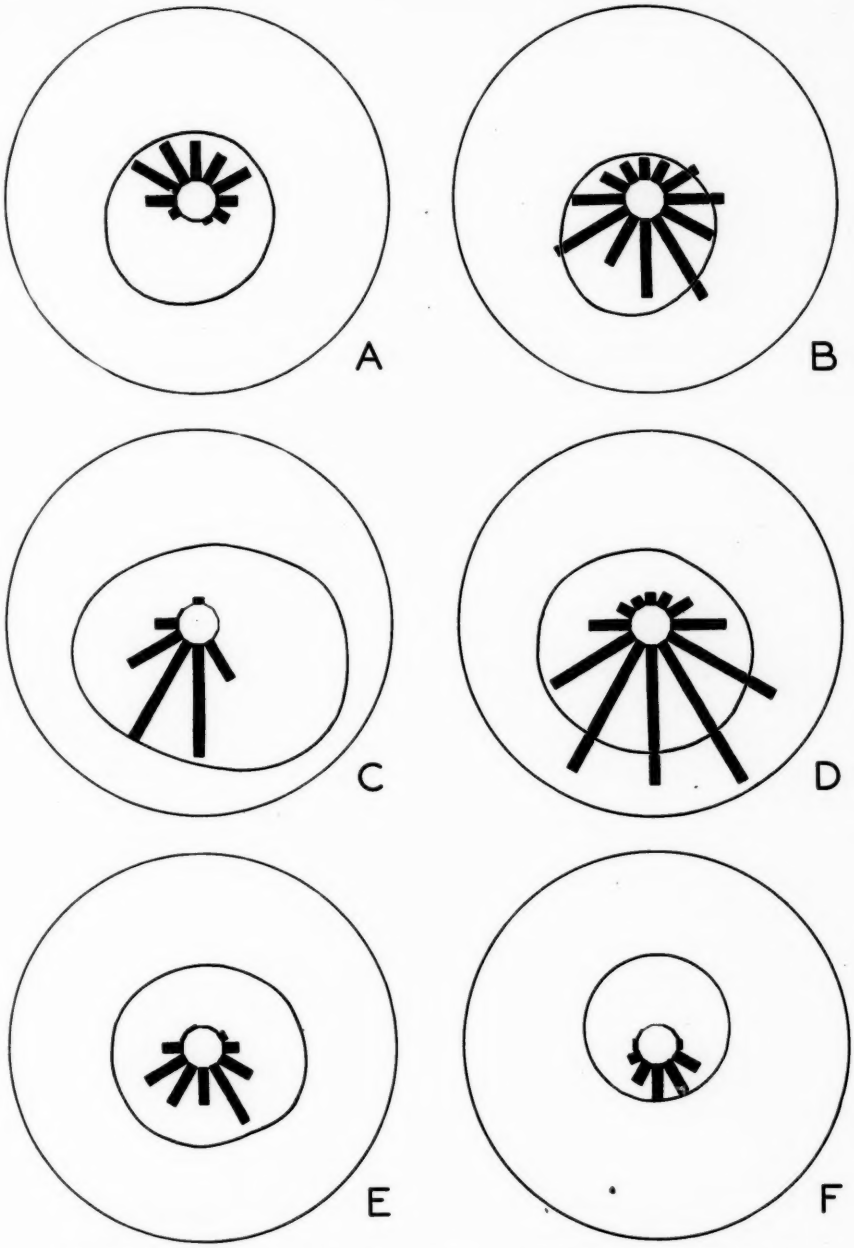

Fig. 1. Temperature and precipitation regimen patterns for six places.

to observed mean values. Representative patterns of temperature and precipitation regimens are thus established, six of which appear in the accompanying figure.

In these charts the outer circles serve only as guides.[2] The somewhat irregular inner curves indicate annual temperature marches. The radiating blocks indicate mean monthly precipitation.[3]

REPRESENTATIVE PATTERNS

The primary intent of the figure is that of supplying to the reader several concrete examples of polar charts in a manner calculated to demonstrate their educational value. The names of the six places represented have been omitted in order to afford an opportunity for reasoning from climatic evidence to locational conclusion. The scales have been omitted in order to emphasize the value of patterns, but for close reasoning it is necessary to keep in mind some such approximate notion of scale as has been presented in the footnotes. Chart A will presently be described in detail. The subsequent charts will then be taken up in order, but the reader is urged to study them and arrive at his own conclusions in advance of reading the descriptions in order that he may have a true measure of the fascination students feel toward studies of this type and also a demonstration of the rapidity with which they develop climatologic skill.

Chart A represents a station in the northern hemisphere because the lowest temperatures occur in December, January, and February. (The temperature curve lies closest to the center of the chart at the positions of 11, 12, and 1 o'clock.) The moderate temperatures (actually about 75°F. for the warmest and 55°F. for the coldest month) suggest middle latitudes. A tropical highland station ordinarily exhibits even greater uniformity in monthly temperatures (circular pattern on the chart) and if a warmest month be evident it occurs during our spring or fall, rather than summer or winter. The cold month temperature of 55°F. precludes location very far north, only an island rather eastward in each of the oceans or the coast of the Iberian Peninsula could have this temperature and a latitude of more than 40°. The relatively small annual range precludes location far inland. The precipitation regimen indicates two practically rain-

[2] Actually they mark the value of 100°F. and the sides of the inner dodecagons mark 0°F. on each ray. But the spacing of temperature units between these limits is not uniform, a geometric progression being used in order to prevent slope distortion depending on the distance to the center of the chart. Thus the temperature of 74°F. lies midway between 100°F. and 0°F. and 50°F. lies only about one-fourth of the distance out from 0°F.

[3] According to uniform scale. The zero points are evident as the sides of the dodecagons. The longest block, on chart D, represents a mean precipitation of about 16 inches for June. In proportion to the temperature scale on the Leighly charts the precipitation scale has been enlarged threefold here for satisfactory reproduction of minor amounts.

less summer months, July and August, and a decided winter season maximum. As the January precipitation amounts to about four inches and the annual about thirty the station is definitely humid rather than arid in climate. Of course the precipitation regimen immediately marks the station as Mediterranean in climate there being no other situation on earth where such a summer deficiency in proportion to total precipitation occurs. The record must, therefore, be that of a station in California or else near the Mediterranean Basin itself. The advanced student in climatology will have noted a strong west coast suggestion in the delayed, August, temperature maximum and in the early, November, precipitation maximum. The latter will have definitely ruled out California as a possibility and all of the facts together will have eliminated any location in North America. Actually the station is Cape Spartel, in Tangiers.

Chart B shows a winter somewhat colder than that of Cape Spartel and a summer somewhat warmer (actually about 37°F. and 78°F. for extreme months). These comparatively moderate temperatures again focus our attention upon middle latitudes in the northern hemisphere. The summer season precipitation is several times greater than that of the winter season, definitely eliminating a west coast location. No month may be considered deficient in precipitation, however, as even the driest winter month appears to have two inches or more. The absence of a truly dry winter points toward east coast rather than continental interior location. The moderate temperatures tend to confirm this opinion. The August maximum temperature suggestively points in the same direction. The advanced student of climatology will have noted the double maximum (June and September) precipitation pattern and will have definitely thought of Japan. Thus we arrive at the conclusion that Chart B likely represents an east coast station in middle latitudes. If we recall that the January mean temperature of 32°F. occurs at about New York City and Yokohama the station in question apparently lies some distance south of one of those points. It is actually Kioto, in Japan.

Chart C presents several very interesting features. The temperature varies between nearly 93°F. in May and 61°F. in January. The late spring is thus actually *hot* and the winter is quite *warm*. With such temperatures the station must lie just beyond the limits of tropical climate in the northern hemisphere. Summer temperatures drop as soon as the relatively heavy rains begin. The pattern is so characteristic of Monsoon climate that we may as well immedi-

ately inform the reader that the record is that of Allahabad, quite near the central portion of the Ganges floodplain. The eye of the advanced student will have been caught by the characteristic, tho slight, secondary precipitation maximum in January and will have decided on northern India immediately. The winter rainfall of this region, tho due to storms which possibly originate as far east as the Iranian Plateau, may be thought of as the tail-end fragment of the Mediterranean winter maximum. It is the basis of the winter rabi crop and therefore highly significant in terms of population density.

The relatively high and quite uniform temperatures in Chart D suggests tropical border conditions. The winter is about that of Allahabad but the summer is notably cooler. The patterns as a whole resemble those of Kioto but the temperatures are higher, the precipitation values greater, and the seasonal contrast is better marked. The precipitation is too well distributed among the months of the year to suggest a decidedly monsoonal condition in spite of the excellent summer maximum. Extreme east coast locations, such as Florida or Formosa, are improbable in the light of the relatively dry winter and west coast locations impossible for the same reason. For the latitude indicated by the temperature curve we have eliminated most possibilities except such semi-east coast locations as the shores of the Gulf of Mexico, Caribbean, or South China Sea. Actually the station is Hongkong, China.

The temperatures in Chart E indicate moderate, rather than very warm, temperatures (actually falling between 63°F. and 73°F.). The uniformity indicated by the almost circular temperature curve suggests either a tropical highland or oceanic location. As January is slightly cooler than July we turn toward the northern hemisphere but closer inspection of the temperature curve will prevent our going too far in that direction. The warmest month is May, suggesting the possibility that the location is well within the tropics and that the sun passes overhead at about that time of year. The advent of a rainy season is accompanied by a drop in temperature and summer rains appear to prevent a significant rise in temperature on the southward journey of the sun. The small drop in July precipitation, as compared with months on either side, is significant in that it appears to be a subdued expression of equatorial double maximum. This confirms the belief that the station is well within the tropics. To have such uniform and relatively moderate temperatures it must be located at some elevation. The total

precipitation appears rather small for a location in tropical Asia. India is definitely eliminated by the absence of monsoonal tendencies. Locations near the coasts of Africa or between northernmost South America and Mexico appear probable. The station is Oaxaca, Mexico.

Chart F introduces some innovations. Its southern hemisphere location is evident in the warm January and cool July. Without a definite scale one might have difficulty in deciding whether the climate is humid or arid, as the total precipitation shown by the twelve blocks is certainly not large in amount (actually it is a little over 14 inches). The decision is rather close anyway because most of the precipitation occurs in winter and is relatively more effective than a similar amount falling in the opposite season because it comes at the time when the evaporation rate is lowest and remains longer in the soil as moisture. The station thus is either within Steppe climate on the borders of Mediterranean climate, or else a small distance from the former within the latter. It might thus represent a place in southernmost Africa, in Chile, or on one of the southwestward coasts of Australia. It is actually Santiago, Chile.

PRACTICAL APPLICATIONS

The classroom uses for polar charts are many. They may be used for analytical purposes in a manner paralleling the discussion just ended. Students may be required to prepare charts representative of several different climates. Prepared charts may be mounted on outline tracings, or pantograph enlargements, of world or of continental wall maps. This is a most effective method of fixing climatic distribution in the minds of students. If the scale of the map be smaller than 1:20,000,000 an effective space economy consists of trimming each chart down to the outlines of its temperature curve prior to mounting. Used in connection with climatic maps[4] polar charts forcefully bring out the meanings of terms students are otherwise likely to regard as nebulous abstractions. Presented as "unknowns" the charts are excellent examination questions.

Several convenient climatological tables[5] furnish temperature

[4] The large Klimakarte der Erde, W. Köppen-R. Geiger, Justus Perthes, Gotha, has been copied and, with modifications, is available in the latest edition of Goode's School Atlas, as is a refinement of Herbertson's Thermal Regions by A. E. Parkins. Equally effective is the use of polar charts in connection with the many published maps showing the distribution of natural vegetation.

[5] H. H. Clayton: World Weather Records, Smithsonian Miscellaneous Collections, Vol. 79, 1927 (tables in both English and Metric units). W. G. Kendrew: The Climates of the

and precipitation records in sufficient variety to serve as source materials for climatic chart studies. Tables for selected groups of stations may be mimeographed and distributed for class use.

RUBBER IN SINGAPORE

O. D. VON ENGELN
Cornell University

Singapore is at the center of the Malayan-East Indies rubber production areas. Here the rubber production of the lands, that are under British governmental direction in this section of the world, is collected and prepared for export.

Altho it has acquired an unsavory reputation, in popular literature, probably from reports circulated by sailormen, Singapore, at the cross-roads of the world, actually is an attractive and, apparently, a very orderly place. And the attractiveness and order are both to be credited to British administration. In the tropical oriental cities governed by them, the English employ swarthy, burly, whiskered Sikhs as policemen. These fierce fellows from India are not inclined to deal lightly with Chinese, Malay, or Japanese breakers of the peace. Such policing makes for order.

The attractiveness is provided for themselves by the British residents. The Englishman sojourning in tropical lands has learned that, where he has his residence, open spaces, parks, cricket and polo fields are very conducive to general comfort and well-being. For one thing they permit air to circulate and for another they provide prospects. Hence these open spaces give escape from the feeling of crowding invariably aroused by the composition of the native city and from the choking sense induced by the tight growth of the surrounding jungle. Perhaps the British originally went in for the parks and open spaces in the tropical colonies only because they are similarly liberal in the disposition of land for such purposes at home. In any event it is a practice that gives living in the tropics the spaciousness which there, especially, is craved.

But it is curiously more difficult to get about in wide-spread Singapore by asking questions in English of the many-com-

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Continents, 2 ed., Oxford, 1927 and C. E. P. Brooks: Climate, New York, 1930 (tables in English units). For the United States, Climatological Data or Bulletin W (1926) of the U. S. Weather Bureau.

plexioned Orientals, or giving directions in the same language to rickshaw men, than in Japanese, Egyptian or Sicilian places. Of course if one uses taxis there is no trouble, but an attempt to get to a particular ship from the center of the city via rickshaw resulted in a ride of two hours over devious ways with an ultimate return to the exact point of departure. Now it is still a question whether those rickshaw men knew what was wanted but planned to provide a ride and get back to their accustomed stands at its

Tamil porters wheeling cases of crude rubber from warehouse at Singapore for shipment to New York. Pile of Malacca rattan in the foreground. (Photo by O. D. von Engeln.)

end, or whether they simply pretended to understand and hoped the light would come to them en route. It may be added that the waterfront of Singapore is vast and complicated with many ships, big and little, at many docks.

However, these paragraphs are getting farther and farther away from rubber except that in the picture rubber is in process

of being put aboard ship. The cubical boxes, each weighing very nearly 225 pounds are the standard containers for plantation rubber from these parts. Only a few boxes of rubber are in sight but the procession of Tamil porters, with long hair, bare torsos and skirts, keeps wheeling more boxes, endlessly, from the go-down or warehouse in the background. At the ship's side is a consignment of Malacca cane, the rough material for some thousands of de luxe walking sticks. Malacca is a rattan, a specially stout variety, really one of a peculiar class of palms, specifically *Calamus scipionum.*

The rubber business in Singapore is conducted chiefly by Chinese merchants. The Chinese tradesman is reputed to be very sagacious but, whatever the degree of this wisdom, it did not suffice to anticipate the continuous and great decline in the price of crude rubber that has taken place in the last several years. As a consequence these Chinese traders found themselves regularly in possession of stocks of rubber that had to be sold at a loss. Some of them no doubt were bankrupted by this buy-high and sell-low performance.

The recent, 1931-32, remarkable, uninterrupted decline in rubber prices has come about from the unhappy combination of a rapidly increasing supply developing in a period of greatly reduced demand. It was thought for a time that supply could be controlled to match demand and thus keep prices up. But the control was not successful because production by natives independent of the large plantations expanded to such volume that it became the dominating factor in the rubber market. As the natives have no overhead of investment and supervision, or labor charges, they can afford to sell at any price, tho it is said their production responds immediately with larger volume to price advances.

Several years ago plantation rubber developments could be seen at any step from first clearing of the jungle lands to the producing age. In a plantation of sufficient maturity to be tapped one gets the impression of an extensive well-kept orchard in the middle latitudes. The trees are different, of course, but they stand in orderly rows, and the ground between is kept clear of tall brush. It is interesting to see the thick, white milk trickling very slowly to the small cups, and to discover that it is possible to develop a distinctly rubbery pellet simply by rolling a few drops of this material between one's fingers.

EDITORIAL NOTES AND NEWS

A new publication of the American Geographical Society of New York, New England's Prospect: 1933, has recently been announced by its editor, John K. Wright. The twenty-seven authors of the book discuss the various aspects of New England with the hope that the background thus presented will be of future service to its people in solving their problems.

According to data released February 1, 1933, by the Department of Interior, the amount of electricity produced for public use in the United States in 1931 was more than 91 billion kilowatt-hours. Of this amount 67 per cent was produced by the use of fuels, the remainder by water power. Of the fuel-generated electricity, 82 per cent was produced by coal, 4 per cent by oil, 14 per cent by gas, and less than one per cent by wood. Based on the average fuel rates for the United States, one ton of coal is equivalent to 3.9 barrels of oil, or 21,800 cubic feet of gas.

The Fifth Biennial Conference of the World Federation of Education Associations for 1933 will be held in Dublin, Ireland, July 29-August 4, inclusive. The main purpose of this federation is the cultivation and development of international understanding and goodwill thru education. One hundred and sixty-three educational organizations, representing the chief countries in the world are members. The Department of Geography will hold its meeting on Monday, July 31, both morning and evening, when these themes will be developed: "Geography as a foundation for the mutual appreciation of peoples," and "The teaching of geography as a means of promoting international understanding and cooperation." For further information write to Erna Grassmuck, State Teachers College, Indiana, Pennsylvania.

In order to preserve for posterity a representative stand of desert flora, a new monument has been created, the Saguaro National Monument. It is about 25 miles northeast of Tucson, Arizona, mainly within the Coronado National Forest, on the slopes of the Santa Catalina Mountains. Some of the specimens of the Saguaro, or Giant Cactus, are believed to be a hundred years old.

A new wild life, sanctuary known as the Boulder Canyon Wild Life Refuge has been established about the lake created by the Hoover Dam on the Colorado River. Its extent is about a thousand square miles. It is expected to afford food and cover for resident wild life and also serve as a resting spot and winter resort for migratory birds.

A new form of farm refrigeration is being tried out on some of the farms in the northern Great Plains. Owing to the sparse population some farmers may live a considerable distance from a cream station or a shipping center. Since sweet cream usually commands a higher price than sour cream, the problem of refrigeration in the hot summers has been a serious one owing to the lack of rivers and lakes for ice supplies. Therefore, some farmers have built an "ice box" in a well-drained site which consists of a small house erected over a pit into which a small quantity of water is allowed to run at intervals during the freezing weather. Ultimately a large cake of solid ice is thus formed. By setting his cream cans on the ice and keeping the house tightly closed, refrigeration is had thruout most of the summer. "The Ice Well for the Dairy Farm," Circular No. 155, issued by the Department of Agriculture, describes this refrigeration as observed at Mandan, N.D., and at Ardmore, S.D.

GEOGRAPHICAL PUBLICATIONS

Isaiah Bowman. **The Pioneer Fringe.** 368 pp., 71 maps, 170 photos, 8 grafs. American Geographical Society, New York, 1931, $4.00.

Director Bowman of the American Geographical Society has long been interested in frontier areas. In his outstanding book, "The New World" (1921, revised repeatedly), they receive considerable attention. For the last decade he has been an active leader in the study of the economic frontiers of the world. "The Pioneer Fringe" splendidly summarizes the studies made by Dr. Bowman himself in South America, Western United States, and Canada, and by experts who worked somewhat under his direction in other parts of the world. It is introductory to a companion volume "Pioneer Settlement" by 26 authors.

"The Pioneer Fringe" is such a scholarly work in social geography that it should have important effects on the policies of various national governments. Pioneering has been so glorified by prominent historians, and has been considered so desirable from a political point of view, that nearly all countries having areas that are being settled have expended recently large sums of money to encourage and aid the settlers.

Dr. Bowman discusses admirably the chief motives for pioneering, the main problems confronting the settlers, the need for scientific studies of the prospects of success, and of the social desirability of encouraging pioneering. Most pioneers are deliberately seeking to improve their economic status, or at least that of their children. In the past those who obtained good land cheaply prior to the arrival of the railroad or of numerous settlers had their land increase in value sharply. Such an increase in land values will not occur, however, if the land is so inadequately supplied with rainfall, or, in the north, with warmth, that it will not pay to farm it permanently. Dr. Bowman points out that most pioneers are extreme individualists and seldom seek scientific advice. Moreover most governmental politicians have been unwilling to consider failures elsewhere. One of the great advantages of this book is its impartial, comprehensive, substantial, but yet very readable presentation of the need for "a science of settlement." The value of the knowledge already available and summarized here is also very great.

The book is divided into Part I: The Generalities, discussed under: The Road to the Border; Pioneering: Modern Style; Does It Pay?; The Invitation of the Land; Metes and Bounds; Railways as Pioneers; Science Plays a Part. The second and much the longer section of the book is subdivided also into seven chapters, presenting regional examples: The Western Zones of Experiment in the United States; The Canadian Fringe of Settlement; The Prospect in Australia; The White Man's Lands of Southern Africa; Imprisoned Siberia; A Modern Invasion: Mongolia and Manchuria; South American Hinterlands.

The numerous photographs are superb and the maps decidedly helpful. The map of the main areas of pioneering and the maps of the variability of the rainfall reveal clearly that most present pioneer settlements are located in regions of highly erratic rainfall in which drouths are frequent. With modern pioneers demanding good roads, schools, rural mail deliveries, hospitals, etc., and unwilling, and usually unable, to pay the taxes required to support these costly implements of civilization, it may well be questioned if, at a time when there is a great surplus of agricultural products, pioneer settlements should be encouraged. Dr. Bowman's book will be read by many thoughtful people, the world over, with great interest. It should be widely read by geography teachers.

STEPHEN S. VISHER

Indiana University

Syllabus for Elementary Schools: Geography. The University of the State of New York. The State Education Department.

A Course of Study in the Social Sciences. Chicago Public Schools, Bulletin SS-789, Junior High School.

The Syllabus of Geography for New York State makes no attempt to blend geography with other subjects but purports to be a systematic study of geographic facts and their immediate outcomes in grades below the seventh, and in the seventh grade, a study of geographic relationships. It definitely cautions against the introduction of facts from other subjects unless such facts make clear geographic relationships. Furthermore, it suggests that a child's relation to society has been over-emphasized; information about things, it states, is as important as information about people. "It is the dynamic relation that exists between the two that counts."

In general outline, the course departs little from the usual one-cycle plan. It is systematic, comprehensive, and definite in regard to the facts and relationships to be taught. Reference books and maps are well selected and broad enough in scope to meet the varying needs and interests of pupils and teachers. Many methods of procedure are suggested but teachers are urged to work out their own methods to suit their own students and localities, provided that they keep in mind the phenomena and interpretations that they are to teach.

To the reviewer facts of geology and physiography are introduced that are not necessary for geographic interpretation. For example, detailed study of drainage basins, drumlins, escarpments, drowned valleys, pre-glacial valleys, et cetera, is beyond the scope of elementary geography. Altho facts are the bases of all interpretation facts alone are not geography. Beginning the study of geography implies beginning the interpretation of facts. Relationships within the comprehension of third grade children should be emphasized as much in that grade as are the more complex relationships in the seventh grades. In the study of milk in the third grade, for example, there is no mention of the relation of the production of milk to land forms and means of transportation, but these topics are worked out in isolation later on.

The course is minutely outlined and so few criteria are given for intelligent elimination that in order to "cover" it, facts alone may be emphasized. The syllabus would be improved if there were some illustrations of the use of facts in solving simple geographic problems and if it contained some suggestions as to methods of organizing material and of testing.

From the viewpoint of teaching the syllabus is weakened by following the traditional order of topics—location, shape, size, et cetera—rather than by following the psychological order of the study of human activities in regions and the investigation of the geographical reasons for such activities.

The Chicago course is a blended course with emphasis mainly on history and civics altho it contains four units of about ten weeks each which are primarily geographical. They are: (1) How geographical conditions have helped to make a great nation of the United States and how the people have contributed to the nation's greatness; (2) Establishing the United States commercially and industrially; (3) Industries, resources, and trade of the chief countries; and (4) World Trade and consumption.

In working out these units, physical factors and resources are used to explain the occupations of the people; comparisons of the regions are made, problems are suggested to further careful organization of the material studied, and the interpretation and making of maps are required.

It is an "activity" course in contrast to the topical outline course of New York State. The activities suggested are varied and stimulating and references to maps, pic-

tures, and books are numerous and well selected. The standards of attainment give criteria for emphasis and testing.

While the material is excellent, it seems to the reviewer that the children would have a better understanding of all the course if the first year's work were devoted to a systematic study of geography arranged as far as possible as an activity program which would include any historical background necessary to explain present day geography, and if the next two years were devoted primarily to history and civics with the use of geography for interpretative purposes.

ELLA M. WILLSON

Michigan Normal College
Ypsilanti

Clarence E. Koeppe. **The Canadian Climate.** 280 pp. 55 maps and grafs, 49 illustrations. McKnight & McKnight, Bloomington, Ill. 1931

The objectives of this volume expressed in the author's own words are "first, to show the broad features of the climate of Canada and Newfoundland as a whole; and second, to present some of the seasonal characteristics in more detail and on a regional basis." These aims have been successfully realized.

This book fills a gap in Canada's scientific literature. The data have not in general been lacking but they have not been conveniently accessible. In addition to making the data readily available the author supplies an interpretation of the economic significance of what to most persons would be merely "dry" facts.

There are so many items of interest in Mr. Koeppe's publication that to quote them all would necessitate the reproduction of a large part of it. We can point out just a few striking items. We are told, that altho "seven-eighths of Canada experiences a mean January temperature below zero," practically all of the country has at some time or other experienced temperatures of 80° F. or more. Officially the lowest temperatures have been recorded in the Mackenzie Valley, whereas the maximum temperatures have been recorded in a number of different localities, mostly in Western Canada. On the whole, excepting for the Pacific coast region, the temperatures of Canada are lower than normal for the latitude. Precipitation over the greater part of the country is moderate in amount but the low rate of evaporation largely offsets this seeming deficiency. The maximum precipitation occurring in the growing season is a happy circumstance for Canadian agriculture.

There are numerous maps, grafs, and photographs effectively illustrating the text. Many of the photographs emphasize, particularly, the diversity of agricultural production. The impression that Canada is a grain country primarily, undoubtedly, will be revised after a glance at the illustrations and a reading of the text.

While it is always possible to find cause for criticism in any publication, there is but one item to which the reviewer would direct attention, namely, the title of the book itself. It would appear that since there is a considerable diversity of climates in Canada, the title "Canadian Climates" would do the book greater justice than the one which has been utilized.

There is a good bibliography, a set of valuable tables and an adequate index. For those persons interested in the economic aspects of Canada, in teaching the subject of Canada, or who are thinking of settling in that country, Mr. Koeppe's volume will prove of the greatest value.

EUGENE VAN CLEEF

Ohio State University

Charles O. Paullin. **Atlas of the Historical Geography of the United States.** Edited by John K. Wright. Text, 145 pages, and 227 half-plates. Published jointly by Carnegie Institution of Washington and the American Geographical Society of New York. 1932.

Of the specialized atlases, the historical atlas vies in importance with the economic in so far, at least, as mere numbers reflect degree of importance. Perhaps most familiar are the atlases tracing the history—rarely the historical geography—of the Holy Land and of the Mediterranean lands, but there are also many historical atlases of Europe and of the entire world in all the common languages. Almost without exception the atlases are accompanied by a text ampliative, descriptive or explanatory of the maps. Separate atlases for the United States have not been available in great number, a situation rendering their characterization a relatively easy matter. True to their titles, these atlases portray American history; more especially those aspects of it which readily lend themselves to mapping on small scales in small, compact volumes which have made but little pretense to cartographic perfection. That these atlases have had largely utilitarian purposes is also well known, and this is a severe limitation to be met by any compilation, especially an atlas. In short, earlier atlases have been mainly teaching devices for use by college students, most of whom resort to an atlas even less often than to a dictionary (if that is possible) and under such compulsion as never to have acquired an appreciation for maps nor skill in their interpretation. The maps of such atlases, having here located certain historical events, or there portrayed successive changes in state or other boundaries, or elsewhere revealed legislative action taken by states on political questions, nevertheless fall short of recording *historical geography*, a gap only partially filled by accompanying textual material.

In order to determine more exactly the elements of uniqueness possessed by this new atlas, comparisons were made with regard to the number of plates devoted to different purposes in this and other atlases. The results are given below. In this tabulation the numbers refer to percentage of total plates. Atlas "B" is an atlas of American history with a plate size of 7½ x 10 inches, Atlas "C" is the United States portion only of a world atlas (5¼ x 8¾) while Atlas "D" is a Canadian atlas (7½ x 10 inches). In the first column are the data for the atlas under review whose plate size is 10¼ x 14 inches, consisting of 227 half-plates with a text of 145 pages and an index of 13 pages.

	Atlas of the Historical Geography of U.S.	*Atlas B*	*Atlas C*	*Atlas D*
Natural environment	4	0	8	7.8
Cartography	15.4	0	0	0
Indians	3.1	3	4	1.5
Explorers' routes	1.3	8.3	0	21.8
Boundary disputes	8.4	2	0	3
Foreign territorial claims of U.S. other than as above	.9	7.1	0	0
Land	11	1.8	0	0
Evolution of state boundaries other than as above	4.1	15	20.5	17.1
Colleges and churches	5.1	0	0	0
Politics and reforms	18.1	25.6	17.0	0
Population, composition	5.8	.1	0	6.2
Population, density distribution	2.5	9	11.5	4.7
City plans	2.2	0	0	0
Military history	4	8.3	25	18.6
Economic history	13.7	11	0	19.3
Territorial claims of U.S.	.4	1.8	12.5	0
Other maps	0	7	1.5	0

Radical departures from the other atlases appear to be chiefly in the following divisions: natural environment, cartography, and the somewhat related section entitled "lands," the maps showing college and church distribution and the city-plan maps. Changes nearly as radical are: reduction in space reserved for explorers' routes *per se* and reduction nearly to the vanishing point of maps showing extra-continental claims of the United States and of claims of foreign powers within the United States. Moreover, restraint has obviously been exercised in the number of maps showing politics and reform movements and sites of military engagements, but other types of maps retain approximately their customary proportions of space.

In other, less easily measured particulars, this new atlas differs from its predecessors. In place of the traditional chronological arrangement thruout, the maps have been grouped into the several categories within each of which an historical sequence is followed. Even tho a finished product of two decades of coöperative planning and preparation, the atlas lays claim neither to finality nor to complete solution of every historico-geographical problem. Thus a distinctly scholarly tone colors the whole volume. This spirit is reflected in the exhaustive manner with which sources and documents have been critically examined with the result that, as stated in the introduction: "not only will the atlas be used as a reference book by those who wish to look up particular points, but original studies will undoubtedly be based upon the data that it presents." This use for research purposes seems all the more likely because of the large scales upon which most of the maps have been reproduced and, when statistics form the basis of the map, distributions are usually shown by counties.

Properly to evaluate this new atlas requires not only more space than has been allotted to this review, but also a broader viewpoint than is likely to be possessed by any one individual. That the atlas is a masterpiece of atlas-making is unquestioned. The maps have been selected, drawn and edited with meticulous care and lithographed with consummate skill. Space has been economized by shrewd combinations of many features on one map but this has never been done to excess. The worker in historical geography might be led to express the wish for example, that the section on cartography had been expanded by adding more maps of parts of the United States, possibly at the expense of certain maps in the section on politics or those showing colleges and churches but historians, for whom the atlas is in part intended, vigorously defend a contrary viewpoint. As it is, the cartographic reproductions form the finest collection which has appeared in this country since 1926. Still others may question the logic of including a number of economic maps which have been drawn from recently published data and appear as cartograms in the atlas. On the other hand only a few half-plates have been used in that fashion and they certainly round out the series of which they are a part. In view of its probable wide use in foreign countries it seems unfortunate that no map carries the state names, altho by studying many maps thruout the volume the foreign student will be able laboriously to piece together a political map. The atlas appears opportunely and fills a long-recognized gap in the source material of geography and history.

RALPH H. BROWN

University of Minnesota

Wallace Thompson: **Greater America.** 275 pp. E. P. Dutton & Co. Inc., N.Y., 1932. $3.00.

This book might have been greater if the subject had been lesser: the more dissipated the effort the more tenuous the result. There is a superficial resemblance between "Greater America" and a recent best seller "Little America." But the resemblance does not go beyond the cover. In fact, relative dissipation of literary effort seems to be indicated by the adjectives in the two titles.

The title is not necessarily fatal. In fact, "Greater America" might have covered a multitude of worth-while ideas. But the author takes his title to heart from the very beginning, sets his face against stating specific facts, and disclaims intention to do anything but large scale generalizing on the whole subject. Thereafter he sticks firmly to the purpose of spreading himself over the Western Hemisphere and only rarely allows significant statements about specific experiences or places or topics to creep into the text.

The author's stated excuse for thus employing blue sky salesmanship methods is that the modern man no longer has leisure for details but "prefers, by the hundreds of thousands, to begin his exploration . . . on the back porch of a modern bungalow, and through the eyes of an old man selling iron grills, but an old man who has seen it all and knows it all as he knows the palm of his hand."

External evidence seems to indicate that old men selling iron grills talk more interestingly and reliably on personal experiences than on continental generalizations. The author with serious modesty affirms that he is "no greybeard selling electric waffle-irons," but implies that he belongs in that same class, having "known Latin America longer and better, now, than he knew the home of his boyhood." Unfortunately for his present work this self-estimate seems to be true, the author being one of that company of intelligent but scientifically untrained globe trotters, who are professionals in writing English but admittedly amateurs in scientific investigation, who accordingly contribute interesting and useful information when they recount their own experiences or specific casual observations, but who are blind guides if they push on into broad generalizations and prophesies in the fields of geology, anthropology, economics, geography, or history.

Of many statements the best that can be said is, in the words of a great teacher, "perfectly true, perfectly general and perfectly meaningless." Unfortunately many cases of generalizing are not quite empty enough to be perfectly true and the result is not as innocuous as perfection in all these respects would be.

Let students tell what is wrong with these statements:

"Irrigation has been proven beyond question to be of immense importance in the development of all hot regions."

"Basically the tropical soils are rich in humus."

"The long eastern spur of the Andes reaches, in the hills of the Guiana jungles, almost to the Atlantic."

The llanos "are virtually only an immense river bottom of the Orinoco system."

"Only where there is the Indian, that is the Asiatic, the ancient and implacable foe of Saxon and Latin alike, is there basic misunderstanding."

"The exports of the United States have grown so promisingly in the past that they must be considered as sure to increase."

"Paraguay is of the mountains."

Colombia has "room for the world's crowded millions."

"The Portuguese drove whole tribes of Brazil's Indians into the trackless interior of the Amazon, where the Indian population today is estimated at over 10,000,000."

Perhaps it is unfair to criticize "Greater America" entirely as a book of information, since it is in fact largely a book of propaganda. The several theses which it iterates and reiterates—the unity of the Americas, the industrialization of Latin America, the supreme importance of Latin America for white civilization, etc., are not stated as accomplished facts but advocated as causes to be espoused. Even these, however, do not inspire confidence, in view of various unjustifiable claims in their behalf and weakly supported prophesies of their future. Fairly entertaining are the author's efforts to take into account "the depression of 1931," which intruded but did not spend itself during the composition of the book, and at the same time preserve cherished preconceptions regarding recent Latin American progress.

Unfortunately this book is not an isolated case but rather typical. Readers want to read about important, not insignificant, subjects. On first thought greatness of title seems to be a key to significance of subject matter. Therefore professional writers will write, publishers will publish and readers will buy books like "Greater America."

ROBERT S. PLATT

University of Chicago

Earl C. Case and Daniel Bergsmark. **College Geography.** 700 pp. John Wiley & Sons, New York. 1932. $4.50

There is much in this new book, College Geography, to interest the modern geographer. The book is intended to meet the needs of departments of geography in universities, colleges, and normal schools for a basic textbook. It emphasizes the regional and economic phases of the subject.

There are twenty-one chapters in the book. The first four deal with climate, land forms, soils, and space relationships. Of these the chapter on The Geographic Significance of Soils is especially well written and the material is up to date. On the whole, however, these chapters emphasize the working knowledge of facts of environment, rather than the principles of their operation, and interrelation of these factors as they affect man.

The next eleven chapters deal with regional geography based largely on climatic types. A slight modification of Jones and Whittlesey climatic types is used, and the entire world is covered in this study. The latter is in direct contrast to the plan followed in most recent textbooks published, in which only type regions are selected for illustrations. Much may be said in favor of this plan, since the book undoubtedly will be used by many students who will not take other courses later in geography.

The last six chapters are devoted to the Sea and its Economic Products, Iron and Steel Industries, Fuels and Water Power, Other Mineral Industries, Transportation, and Trade. In these there is a wealth of material for the geographer, and the grafs and maps are excellent. However, here again one has a feeling of the lack of a development of geographic principles—how factors operate in man's environment.

Brief space or none at all is given to such topics as plants and animals as a part of the environment, land utilization, and urban geography. On the whole the book has a strong leaning towards the economic in geography. It is, therefore, particularly well adapted to use as a basic textbook in college geography in schools of commerce and business. With properly prepared teachers to emphasize the development of principles in geography, the book may be used in liberal arts colleges and in normal schools.

The authors are to be commended for the clear and direct style in writing, and for the excellent use of maps, grafs, and pictures. The publisher has used a rather heavy paper but it is of good quality, the type is easily read, and the binding is one of the best.

College Geography is a distinct contribution to the subject, and, without doubt, will take a prominent place among the several textbooks of its type in the field.

BERT HUDGINS

College of the City of Detroit
Detroit, Michigan

The JOURNAL *of* GEOGRAPHY

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Mr. Stewart was a graduate student in Columbia University when the present manuscript was prepared. At present he is with the National Credit Office, New York. Other articles by him on the same region are as follows: The Resources of Manchuria, JOURNAL OF GEOGRAPHY, February, 1932; Manchuria, the Land and Its Economy, *Economic Geography,* April, 1932; Is Manchuria Vital to Japan, *Bulletin Geographical Society of Philadelphia,* April, 1932.

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Dr. Roucek is a professor of social science, Centenary Junior College, Hackettstown, New Jersey, and author of Contemporary Rumania and Her Problems. He contributed, Rumanian Peasant and Agriculture, to the JOURNAL, October, 1932.

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Dr. Shipman is an assistant professor of geography, Mount Holyoke College and author of many magazine articles. To the JOURNAL she contributed, Geography in the Fourth Grade, February, 1924; Criteria for Choosing and Using Geographic Materials for the Elementary Grades, March, 1927; and The New England Flood, January, 1928. This is the twenty-third article in our HOW TO TEACH IT series.

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Dr. Bratton is a professor of geography at the University of Missouri and a frequent contributor to the JOURNAL and other magazines. This is his third contribution in mathematical geography and the twenty-fourth in the HOW TO TEACH IT series.

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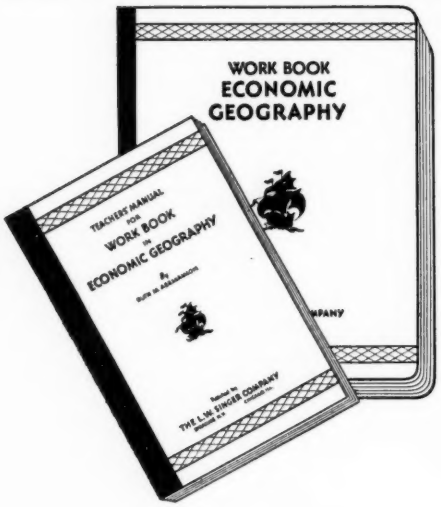

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